DECISION DOCUMENT FOR THE APPROVAL OF INDIANA'S SUBMISSION OF THE STATE'S INTEGRATED REPORT WITH RESPECT TO SECTION 303(d) OF THE CLEAN WATER ACT (Category 5 WATERS)

U.S. EPA has conducted a complete review of Indiana's 2008 Section 303(d) list and supporting documentation and information, and based upon this review U.S. EPA has determined that Indiana's list of Water Quality Limited Segments (WQLS) still requiring total maximum daily loads (TMDLs) meets the requirements of Section 303(d) of the Clean Water Act (CWA or Act), and U.S. EPA's implementing regulations. Therefore, U.S. EPA hereby approves Indiana's 2008 Section 303(d) list. Indiana's list of WQLS still requiring TMDLs appears in Category 5 of the Indiana 2008 Integrated Water Quality Monitoring and Assessment Report (Integrated Report), and U.S. EPA's approval extends only to the waterbodies in Category 5 of the Integrated Report. The statutory and regulatory requirements, and U.S. EPA's review of Indiana's compliance with each requirement, are described in detail below.

I. Statutory and Regulatory Background

Identification of Waters for Inclusion on Section 303(d) List

Section 303(d)(1) of the Act directs states to identify those waters within its jurisdiction for which effluent limitations required by Section 301(b)(1)(A) and (B) are not stringent enough to implement any applicable water quality standards, and to establish a priority ranking for such waters, taking into account the severity of the pollution and the uses to be made of such waters. The Section 303(d) listing requirement applies to waters impaired by point and/or non-point sources, pursuant to U.S. EPA's long-standing interpretation of Section 303(d).

U.S. EPA regulations provide that states do not need to list waters where the following controls are adequate to implement applicable standards: (1) technology-based effluent limitations required by the Act; (2) more stringent effluent limitations required by state or local authority; and (3) other pollution control requirement required by state, local, or federal authority.[1]

Consideration of Existing and Readily Available Water Quality-Related Data and Information

In developing Section 303(d) lists, states are required to assemble and evaluate all existing and readily available water quality-related data and information, including, at a minimum, consideration of existing and readily available data and information about the following categories of water: (1) waters identified as partially meeting or not meeting designated uses, or as threatened, in the state's most recent Section 305(b) report; (2) waters for which dilution calculations or predictive models indicate non-attainment of applicable standards; (3) waters for which quality problems have been reported by government agencies, members of the public, or academic institutions; and (4) waters identified as impaired or threatened in a non-point assessment submitted to U.S. EPA under section 319 of the Act.[2] In addition to these minimum categories, states are required to consider any other data and information that is existing and readily available. U.S. EPA's 1991 Guidance for Water Quality-Based Decisions describes categories of water quality-related data and information that may be existing and readily

[1] See 40 C.F.R. §130.7(b)(1).

[2] See 40 C.F.R. §130.7(b)(5).

available.[3] While states are required to evaluate all existing and readily available water quality-related data and information, states may decide to rely or not rely on particular data or information in determining whether to list particular waters.

In addition to requiring states to assemble and evaluate all existing and readily available water quality-related data and information, U.S. EPA regulations require states to include as part of their submissions to U.S. EPA documentation to support decisions to rely or not rely on particular data and information and decisions to list or not list waters. Such documentation needs to include, at a minimum, the following information: (1) a description of the methodology used to develop the list; (2) a description of the data and information used to identify waters; and (3) a rationale for any decision to not use any existing and readily available data; (4) any other reasonable information required by the Region.[4]

Priority Ranking

U.S. EPA regulations also codify and interpret the requirements in Section 303(d)(1)(A) of the Act that states establish a priority ranking for listed waters. The regulations require states to prioritize waters on their Section 303(d) lists for TMDL development, and also to identify those WQLS targeted for TMDL development in the next two years.[5] In prioritizing and targeting waters, states must, at a minimum take into account the severity of the pollution and the uses to be made of such waters. As long as these factors are taken into account, the Act provides that states establish priorities. States may consider other factors relevant to prioritizing waters for TMDL development, including immediate programmatic needs, vulnerability of particular waters as aquatic habitats, recreational, economic and aesthetic importance of particular waters, degree of public interest and support, and state or national policies and priorities.[6]

II. Analysis of Indiana's Submission

Listing Methodology and Reporting

On October 12, 2006, U.S. EPA issued a Memorandum titled *Information concerning 2008 Clean Water Act Sections 303(d), 305(b), and 314 Integrated Reporting and Listing Decisions.*[7] In this 2008 Memorandum, EPA recommends the 2008 integrated water quality reports should follow the *Guidance for 2006 Assessment, Listing, and Reporting Requirements Pursuant to Sections 303(d), 305(b), and 314 of the Clean Water Act* (2006 Integrated Report Guidance (IRG))[8], which was added as a supplementary enclosure. The 2008 Memorandum also provided some clarifications and additional information to assist in the preparation and review of 2008 integrated water quality reports. The 2006 IRG and 2008 Memorandum recommend that states develop an integrated report of the quality of their waters by placing all waters into one of

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[3] See Guidance for Water Quality-Based Decisions: The TMDL Process, EPA Office of Water, 1991, Appendix C (1991 Guidance).

[4] See 40 C.F.R. §130.7(b)(6).

[5] See 40 C.F.R. §130.7(b)(4).

[6] See 57 Fed. Reg. 334040, 33045 (July 24, 1992); Also see U.S. EPA's 1991 Guidance.

[7] See Memorandum: *Information Concerning 2008 Clean Water Act Sections 303(d), 305(b) and 314 of the Integrated Reporting and Listing Decisions*; October 12, 2008.

[8] See Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act; July 29, 2005.

five assessment categories. Indiana followed the approach set out in the 2006 IRG and 2008 Memorandum, and put waterbodies still requiring TMDLs in Category 5 of its Integrated Report (IR). The waterbodies in Category 5 constitute the State's Section 303(d) list. Region 5 is only taking action on Category 5 of Indiana's 2008 IR[9]. Table 1 under Section 1 of Appendix A1 of this Decision Document, identifies the waterbody assessment units (AUs) and impairments listed on Indiana's 2008 303(d) (Category 5) list.

In order to assess the quality of Indiana's waters, IDEM developed a surface water quality monitoring strategy which calls for rotating through each of five major water management basins to monitor waters under the state's data-collection sampling programs (Watershed Monitoring, Fixed Station Monitoring, *E. coli* Monitoring, Fish Community Monitoring, Fish Tissue Monitoring, Macroinvertebrate Community Monitoring, Special Projects, and Clean Lakes). The water quality assessment process is applied to each data-sampling program. Then the individual assessments are integrated into a comprehensive assessment for each waterbody by use designation: aquatic life support, fish consumption, drinking water supply, and recreational use.

On April 9, 2008, the Indiana Department of Environmental Management (IDEM) submitted the Integrated Report. The Integrated Report identifies watersheds using 14-digit hydrologic unit areas (HUAs). The HUAs range from approximately 5,000 to 20,000 acres. The river miles in each HUA are designated into a single waterbody and broken into segments (AUs) to properly reflect water quality assessments.

Large rivers with over 1,000 square miles of drainage area are tracked by the reach of the mainstem. Lakes, reservoirs, and wetlands are tracked individually, as individual AUs, and are reported with the HUA in which they are located. Lake Michigan is tracked both as Great Lake shoreline miles and as a lake with its own USGS cataloging unit (eight-digit hydrologic unit). The shoreline of Lake Michigan is assigned mileage units, while the separate lake waterbody is assigned acreage units. Both the lake and shoreline portion of Lake Michigan are tracked and reported as individual AUs.

Water quality assessments are done by evaluating and coordinating data from site specific chemical (water, sediment and fish tissue), physical (habitat, flow data), and biological (fish community, macroinvertebrates, and *E. coli*) monitoring of Indiana's rivers, streams, and lakes. Chemical data for toxicants (total recoverable or dissolved metals, polynuclear aromatic hydrocarbons (PAHs), pesticides, ammonia, and cyanide), conventional water chemistry parameters (dissolved oxygen, pH, temperature, and anions), and bacteria (*E. coli*) were evaluated for compliance with Indiana's Water Quality Standards, 327 IAC 2-1-6 and 327 IAC 2-1.5-8. U.S. EPA 305(b) Guidelines were applied to chemical and biological data as indicated in *Guidelines for Preparation of the State Water Quality Assessments (305(b) Reports) and Electronic Updates: Supplement, Washington, DC: U. S. Environmental Protection Agency. EPA-841-B-97-002B.*[10]

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[9] See Table A13 and Table A14 under Attachment 1 of the *Indiana Integrated Water Monitoring and Assessment Report 2008: Section 305(b) Water Quality Report and Consolidated List, Including Section 303(d) List of Impaired Waters (Category 5)* submittal. Also see e-mail to Vilma Rivera-Carrero from Jody Arthur dated 4/11/08.

[10] See Attachment 2, and Table 8 within the narrative of the *Indiana Integrated Water Monitoring and Assessment Report 2008: Section 305(b) Water Quality Report and Consolidated List, Including Section 303(d) List of Impaired Waters (Category 5)* submittal, which identifies specific criteria used for each use support assessment (aquatic life support, fish consumption, drinking water supply, and recreational uses).

Lake assessments pursuant Section 314 of CWA were based on the Indiana Trophic State (or eutrophication) Index, a modified version of the BonHomme Index developed for Indiana lakes in 1972. This multi-metric index combines chemical, physical, and biological data into one overall trophic score for each public lake and reservoir sampled. Scores range from 0 to 75. Lower values reflect lower concentrations of nutrients. Declining or extirpated Cisco populations and the presence of exotic and toxic algae species were also considered when evaluating lake water quality for aquatic life use.[11] For drinking water reservoirs, taste and odor was also considered as a potential indicator of water quality problems.

IDEM's 2008 cycle listing methodology included three major changes from the previously used 2006 cycle listing methodology:

- IDEM developed some additional criteria for assessing recreational use support in lakes and reservoirs within the context of aesthetics in order to more fully assess the water quality condition of Indiana's lakes and reservoirs. These criteria include total phosphorus concentration thresholds and the associated range of Chlorophyll-*a* concentrations which were based on the analyzed results of a study conducted by Limno-Tech, Inc., of natural lakes and reservoirs in Indiana. IDEM noted that the new assessment criteria are supplementary criteria which do not replace any assessment criteria currently in place for lakes and reservoirs.[12]

- IDEM developed a new assessment methodology for making water quality assessments for fish consumption. IDEM's old fish consumption assessment methodology relied primarily on the State's Fish Consumption Advisory (FCA), published by the Indiana State Department of Health (ISDH). The new fish consumption assessment methodology instead uses fish tissue-based criteria which include the U.S. EPA human health-based water quality criterion for methylmercury (> 0.3 mg/kg), and a criterion for polychlorinated biphenyls (PCBs) (< 0.02 mg/kg) derived from U.S. EPA's (2000b) human health methodology.[13] IDEM implemented the new methodology by completing a statewide reassessment of IDEM fish tissue data from 1994-2005.[14] Fish consumption impairments, which under the previous methodology were identified as FCA for Mercury and FCA for PCBs, will be identified under the new methodology as Mercury in Fish Tissue and PCBs in Fish Tissue.

- IDEM's use of support criteria for fish community and macroinvertebrate community data have undergone significant changes since they were first adopted in 1996.[15] IDEM's criteria developed in 2002 for making assessments with biological data are calibrated to reference

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[11] Table 2 and Table 3 under Attachment 2 of the *Indiana Integrated Water Monitoring and Assessment Report 2008: Section 305(b) Water Quality Report and Consolidated List, Including Section 303(d) List of Impaired Waters (Category 5)* submittal.

[12] Table 6 under Attachment 2 of the *Indiana Integrated Water Monitoring and Assessment Report 2008: Section 305(b) Water Quality Report and Consolidated List, Including Section 303(d) List of Impaired Waters (Category 5)* submittal.

[13] Table 9 under Attachment 2 of the *Indiana Integrated Water Monitoring and Assessment Report 2008: Section 305(b) Water Quality Report and Consolidated List, Including Section 303(d) List of Impaired Waters (Category 5)* submittal.

[14] Table 5 under Appendix A of the *Indiana Integrated Water Monitoring and Assessment Report 2008: Section 305(b) Water Quality Report and Consolidated List, Including Section 303(d) List of Impaired Waters (Category 5)* submittal.

[15] Table 11 under Attachment 2 of the *Indiana Integrated Water Monitoring and Assessment Report 2008: Section 305(b) Water Quality Report and Consolidated List, Including Section 303(d) List of Impaired Waters (Category 5)* submittal.

conditions in Indiana and remain in effect today. However, with the changes in 2002 and each change prior to that time, resulting criteria were applied only to the basins being assessed at the time. In 2007, IDEM completed its review of all aquatic life use support assessments made prior to 2002 to identify any waterbodies that may now be considered fully supporting. Biological impairment classifications for streams were based on the sampling and evaluation of either the fish communities or benthic aquatic macroinvertebrate communities, or both. Indices of Biotic Integrity (IBI) for fish and macroinvertebrate IBI (mIBI) assessment scores, or both, were calculated and compared to regionally calibrated models. In evaluating fish communities, streams rating as "fair" or worse were classified as nonsupporting for aquatic life uses. For benthic aquatic macroinvertebrate communities, individual sites were compared to a statewide calibration at the family level of identification for Indiana. All sites at or above background for the calibration were considered to be supporting aquatic life uses. Those sites rated as moderately or severely impaired in the calibration were considered to be nonsupporting. Nonsupport for aquatic life use was considered an impairment of the biological community. Consideration was also given to the size of the stream being assessed. Habitat evaluations were considered in determining the potential for waters to support aquatic communities. If habitat was the reason for nonsupport (impairment is not caused by a pollutant), then the waterbody was not considered for inclusion on IDEM's 303(d) List of Impaired Waters (Category 5).

Identification of Waters and Consideration of Existing and Readily Available Water Quality-Related Data and Information

U.S. EPA has reviewed Indiana's description of the data and information it considered in developing the Integrated Report and its 2008 303(d) list, its methodology for identifying waters, and considered any other relevant information including information the State submitted in response to requests for additional information. U.S. EPA concludes that the State of Indiana properly assembled and evaluated all existing and readily available data and information, including data and information relating to the categories of waters specified in 40 C.F.R. § 130.7(b)(5). In addition, the State provided its rationale for not relying on particular existing and readily available water quality-related data and information as a basis for listing waters.

Indiana solicited data from federal and state agencies, volunteer groups and municipalities.[16] IDEM used data that were submitted from these entities which met IDEM's QA/QC requirements as identified in the State's QA/QC manual.[17]

In developing the 2008 Integrated Report, the State placed waters in Category 5 where monitored data demonstrated the water was partially supporting, non-supporting, or threatened for one or more uses. Waterbodies were classified as monitored if surface water quality data used for assessments were no more than five years old, or were still considered representative of current conditions. Waterbodies were classified as evaluated if the primary data used for assessment were more than five years old and little was known concerning changes in the watershed, or the assessment was based on other monitored waterbodies in the watershed. Only waterbodies designated as monitored were considered for 303(d) listing purposes. IDEM uses data more than five years old if it concludes the data are still valid and represent the

[16] See Appendix F and pages 32 - 35 within the narrative of the *Indiana Integrated Water Monitoring and Assessment Report 2008: Section 305(b) Water Quality Report and Consolidated List, Including Section 303(d) List of Impaired Waters (Category 5)* submittal.

[17] See IDEM's QA/QC manual: *Quality Assurance Project Plan for Indiana Surface Water Quality Monitoring and TMDL Programs*, October 2004.

current water quality of the waterbody. During reassessment, several types of information are considered, including data quality issues, past assessment methodologies, land use data, historical information from the public, etc. Regardless of the situation, no assessment is dismissed as invalid based solely on the age of the data.

U.S. EPA has also determined that the State properly listed waters with non-point sources causing or expected to cause impairment, consistent with Section 303(d) of the Act and U.S. EPA guidance. Section 303(d) lists are to include all WQLS still needing TMDLs, regardless of whether the source of the impairment is a point and/or non-point source. U.S. EPA's long-standing interpretation is that Section 303(d) applies to waters impacted by point and/or non-point sources. In *Pronsolino v. Nastri*, the Ninth Circuit Court of Appeals held that Section 303(d) of the CWA authorizes U.S. EPA to identify and establish TMDLs for waters impaired by non-point sources.[18]

Removal of Waters from the 303(d) List

The State has also demonstrated good cause for not including certain waters that were previously listed on Indiana's 2006 303(d) list. As provided in 40 C.F.R. § 130.7(b)(6)(iv), U.S. EPA requested that the State demonstrate good cause for not including these waters on its 2008 303(d) list. Good cause includes, but is not limited to: more recent or accurate data; more sophisticated water quality monitoring; flaws in the original analysis that led to listing of the water; or changes in conditions.

IDEM identified the following reasons for the waterbody AU and impairment delistings under the 2008 listing cycle:

1. New data indicates that WQS are now being met and the waterbody AU under consideration is in full support of the assessment criteria.
2. The assessment and/or listing methodology has changed, and the AU under consideration would not be considered impaired under the new listing methodology.
   a. Biological assessment criteria change
   b. Fish consumption assessment criteria change
3. An error is discovered in the sampling, testing, or reporting of data that led to an inappropriate AU and/or impairment listing.
4. It has been determined that another program, besides the TMDL program, is better suited to address the water quality problem (Category 4B).
5. It has been determined that the water quality problem is caused by pollution and not by a pollutant (Category 4C).
6. A TMDL has been completed, and the waterbody AU is expected to meet WQS after implementation of the TMDL (Category 4A).

[18] Pronsolino et al. V. Nastri et. al., 291 F. 3d 1123 (9th Cir, 2002); see also U.S. EPA's 1991 Guidance; and National Clarifying Guidance for 1998 Section 303(d) Lists, August 27, 1997.

On the 2008 IR submittal, IDEM identified the waterbody AUs and impairments that are being delisted from Indiana's Section 303(d) list (Category 5).[19] Table 2 under Section 2 of Appendix A1 of this Decision Document identifies waterbody AUs that no longer appear in Category 5 for any impairment. Table 3 under Section 2 of Appendix A1 of this Decision Document identifies waterbody AUs that still remain in Category 5 but for which certain impairments are being delisted. In summary, there were a total of 360 waterbody AUs with 542 impairments entirely delisted from Category 5, and 299 impairments delisted from waterbody AUs that still remain in Category 5 for other impairments.

Waterbodies added to Category 5

The State has added certain waters to its 2008 Section 303(d) list. As provided in 40 C.F.R. § 130.7(b)(4), for each WQLS, states are required to identify the "pollutants causing or expected to cause violations of the applicable water quality standards." IDEM has collected new data, primarily in the Lower Wabash and Kankakee River basins, which show many waterbodies are impaired for one or more parameters and have therefore been added to the 2008 Section 303(d) list (Category 5). Based on this new information, 407 waterbody AUs with 531 impairments were newly listed in Category 5, and 237 impairments were newly added to waterbody AUs previously listed in Category 5 for other impairments.[20] Table 4 under Section 3 of Appendix A1 of this Decision Document identifies new waterbody AUs added to Category 5. Table 5 under Section 3 of Appendix A1 of this Decision Document identifies new impairments added to waterbody AUs previously listed in Category 5. Table 7 under Section 4 of Appendix A1 of this Decision Document also identifies new impairments added to waterbody AUs previously listed in Category 5, with the exception that these waterbody AUs have been resegmented.

Waterbody AU Segmentation Changes in Indiana's 2008 Integrated Report

- IDEM developed an administrative process for splitting stream segments into smaller AUs in order to allow for more accurate application of assessment data. As part of this process, segmentation changes were considered on a case-by-case basis, either to accommodate a more accurate assessment or to correct an earlier assessment in which the data were inappropriately applied. Segmentation changes were based on a combination of factors including primarily hydrology, similarities in land use and potential sources of impairment to allow IDEM to associate and identify impairment(s) more accurately to the waterbody from which the sample was collected and to any others for which results are representative. Also as part of this process, IDEM reevaluates previous assessments made on original AUs along with any recent available data in order to ensure that the original assessment information is properly applied to the resulting new AU. In most cases, the original AU assessment applies to only one or two of the resulting AUs with the remaining units unassessed. Once resegmentation is completed, the IDs of all the original waterbody AUs are retired. Table 6[21]

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[19] See Table A2, Table A4, Table A6, Table A7, Table A8 under Attachment 1 of the *Indiana Integrated Water Monitoring and Assessment Report 2008: Section 305(b) Water Quality Report and Consolidated List, Including Section 303(d) List of Impaired Waters (Category 5)* submittal.

[20] See Table A9, Table A10, Table A11, and Table A12 under Attachment 1 of the *Indiana Integrated Water Monitoring and Assessment Report 2008: Section 305(b) Water Quality Report and Consolidated List, Including Section 303(d) List of Impaired Waters (Category 5)* submittal.

[21] The waterbody AUs and impairments listed in Table 6 were not included in the calculations of the number counts reported for "newly added waterbody AUs" and "newly added impairments" to Category 5. These waterbody AUs

and Table 7[22] under Section 4 of Appendix A1 of the decision document identify all of the waterbody AUs and impairments that resulted from changes in segmentation.

Waters Subject to Other Pollution Control Requirements Stringent Enough to Implement any Water Quality Standards, 40 CFR 130.7(b)(1)(iii) Category 4B

Under 40 C.F.R. 130.7(b)(1), states are not required to list WQLS still requiring TMDLs where effluent limitations required by the CWA, more stringent effluent limitations required by state or local authority, or other pollution control requirements required by state, local, or federal authority, are stringent enough to implement applicable water quality standards. The regulation does not specify the time frame in which these various requirements must meet applicable water quality standards to support a state's decision not to list particular waters.

In keeping with the Integrated Report (IR) approach as provided by the 2008 List Memorandum and 2006 IR Guidance, the State placed waters in Category 4B where other required control measures are expected to result in the attainment of an applicable water quality standard in a reasonable period of time.[23] The State has demonstrated good cause for not listing the seven (7) waterbody AUs and ten (10) impairments listed in Table 8 under Section 5 of Appendix A1 of this Decision Document. All of these waterbody AUs and impairments were previously listed in the 2006 listing cycle. No waterbody AUs or impairments were removed or added to Category 4B during the 2008 listing cycle.

It was determined that the water quality concerns listed for these segments were due solely to point sources. All of the waterbody AUs identified in the Table 8 of Appendix A1 have some type of enforceable mechanism that will result in attainment of water quality standards for these seven waterbody AUs within a reasonable time.

The impairments to the Salt Fork Creek and Camp Ground Branch waterbody AUs were attributed to the Picnic Wood Wastewater Treatment Plant, owned by LMH Utilities Corporation, and are presently being addressed through IDEM's NPDES program. While the plant continues to have sporadic issues related to maintenance problems, it has maintained an approximately 95% compliance record since the original enforcement case was closed in 1996. In addition, LMH Utilities Corporation was issued a construction permit on February 14, 2006, to upgrade its existing treatment facility at Picnic Wood, located in Bright, Indiana. Construction is scheduled to begin no later than March 1, 2007. The planned upgrades to this facility are expected to be complete and operational by October 31, 2009, which is the expiration date of the construction permit. After the upgrades to this facility are complete, IDEM anticipates that the biological communities will recover and these waters will meet the water quality standard for chlorides in the future. IDEM has verified that the planned upgrades to this facility were completed in late 2007, and IDEM inspectors report no recent enforcement issues. It is anticipated that these upgrades will result in the attainment of water quality standards within a few years. However, these waterbody AUs will remain in Category 4B through the 2010 listing cycle to allow time for

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and impairments are a product of the resegmentations of previously listed waterbody AUs and therefore are not considered to be true additions.

[22] The impairments listed in Table 7 were included in the calculations of the number counts reported for "newly added impairments" to Category 5. These impairments were not formerly listed under the previous listed waterbody AUs that were resegmented. Therefore these impairments are considered to be true additions.

[23] See Attachment 4 of the *Indiana Integrated Water Monitoring and Assessment Report 2008: Section 305(b) Water Quality Report and Consolidated List, Including Section 303(d) List of Impaired Waters (Category 5)* submittal.

IDEM to conduct the subsequent monitoring necessary to verify that these impairments no longer exist.

The impairments to the Wabash River waterbody AUs and the Turtle Creek Reservoir waterbody AU were attributed to electric generating facilities discharging to these waters. The facilities in question have NPDES permits for thermal discharge limits based on site-specific standards and have contested the fault allegations based on annual reports they submitted indicating no detrimental effects from their discharges. As a result of this apparently contradictory information, IDEM determined that an additional study was needed to determine whether the monitoring and reporting requirements under Section 316(a) of the Act, 33 U.S.C. § 1326, were sufficient to ensure antidegradation of waters outside the mixing zone. As of the 2004 303(d) listing cycle, IDEM was working with the US Fish and Wildlife Service to develop a protocol to determine if modifications are needed to existing permits to maintain WQS for critical times in the year. In December, 2005, the US Fish and Wildlife Service, through an Interagency Agreement with IDEM, completed a report entitled, *Evaluation and Assessment of Fish Assemblages Near Electric Generating Facilities: with Emphasis on Review of Discharge Submitted Data, Development of the Standard Operation Procedures, and Traveling Zone Assessment* (Simon, 2005). The objectives of this study were to evaluate the information submitted by the industry for compliance with Section 316(a) requirements; to develop standard methods that would provide industrial contractors specific protocols for use in meeting permit monitoring requirements for their heated effluents; and to conduct traveling zone studies of discharge relationships from selected thermal generating facilities, including two of the three facilities to which the above impairments were attributed. After the study was completed, on December 2005, IDEM reviewed the results of this study and determined that additional monitoring and reporting requirements are necessary under Section 316(a) to ensure a well balanced aquatic community of waters outside the mixing zone. In 2006 and 2007, IDEM renewed permits for most electric generating facility permits, which include additional conditions that require the permittees to submit a new Section 316(a) demonstration/variance request with the renewal application for the next NPDES permit. In order to be granted a Section 316(a) variance, these facilities must include a site-specific biological study plan in their request that demonstrates that the variance will not result in biological impairment outside the mixing zone. Variance requests are expected from these facilities within the next five years or less in keeping with IDEM's five-year permit cycle.

Monitoring will be scheduled for these waters to verify that the water quality standard is attained as expected in a reasonable time frame. Where standards will not be attained through implementation of the requirements listed in 40 C.F.R. 130.7(b)(1) in a reasonable time, it is appropriate for the water to be placed in Category 5 of the Section 303(d) list to ensure that implementation of the required controls and progress towards compliance with applicable standards is tracked. If it is determined that the water is, in fact, meeting applicable standards when the next Section 303(d) list is developed, it would be appropriate for the State to remove the water from the Category 4B list at that time.

Waters listed on section 4C of the Integrated Report; Pollution not Pollutant

In keeping with the Integrated Report (IR) approach as provided by the 2008 List Memorandum and 2006 IR Guidance, waters that were identified in this listing cycle as being impaired due to

non-pollutant stressors are now listed in Category 4C of the IR.[24] Indiana listed twenty-two (22) waterbody AUs in Category 4C, which are identified in Table 9 under Section 5 of Appendix A1 of this Decision Document. All of these waterbody AUs and impairments were previously listed in the 2006 listing cycle. No waterbody AUs and impairments were removed or added to Category 4C during the 2008 listing cycle.

The waters identified in Category 4C have a low Index of Biology Integrity (IBI) score which indicates poor biology. However, IDEM has sampled the same locations for chemistry data and has found no violations of the applicable standards. Thus habitat is impaired, but it is not caused by a pollutant. If a pollutant was known to cause the low biological results these waters would be placed on Category 5. The pollution sources for these waters were found to be the following:

- Hydromodification (Channelization), which refers to the straightening of a channel and/or destruction of instream habitat. This source is typically attributed to waters with impaired biotic communities where the chemical data reveals no pollutant loadings that are driving the impairment, and the primary source of the impairment is straightening of the channel and/or the destruction of instream habitat. This source may or may not be associated with continual drain maintenance and is determined on a case-by-case basis at the time assessments are made.

- Habitat Modification, which refers to destruction or removal of instream habitat due to activities other than hydromodification. This source is analogous to hydromodification in that it is typically attributed to waters with impaired biotic communities where the chemical data reveals no pollutant loadings that are driving the impairment, and the primary source of the impairment is the destruction of instream habitat. This source is commonly associated with continual drain maintenance.

- Natural Sources, which refers to naturally intermittent streams with flow regimes such that they cannot achieve oxygenation sufficient to meet Indiana's water quality standards for dissolved oxygen or sustain a healthy aquatic community. This source is typically associated with low dissolved oxygen impairments or impaired biotic communities.

The waters in Category 4C will remain candidates for future monitoring through IDEM's probabilistic sampling program of each basin once every five years according to the IDEM's Monitoring Strategy planning schedule.

Public Comments on Listing Decisions

On September 26, 2007, Indiana public noticed a draft 303(d) list in the Indiana Register for a 128-day period that ended on January 31, 2008. IDEM held three public meetings to discuss the list: November 14, 2007 at the Harrison County Courthouse in Corydon, IN; January 3, 2008 at the Northwest Indiana Regional Planning Commission in Portage, IN; January 7, 2008 at the Indiana Government Center South Building in Indianapolis, IN. IDEM notified specific stakeholders and interested parties, and announcements were made to the general public before the meeting.

IDEM's list submittal package to U.S. EPA included the following information:

[24] See Attachment 4 of the *Indiana Integrated Water Monitoring and Assessment Report 2008: Section 305(b) Water Quality Report and Consolidated List, Including Section 303(d) List of Impaired Waters (Category 5)* submittal. Also see e-mail to Vilma Rivera-Carrero from Jody Arthur dated 4/11/08.

- ♦ Submission Cover Letter
- ♦ Indiana's 2008 305(b) Integrated Water Monitoring and Assessment Report narrative
- ♦ Appendix A: Indiana's 2008 303(d) List of Impaired Waters narrative
  - — Attachment 1: Indiana's 2008 303(d) related tables
    - ● Table A1: Segmentation tracking table for previously listed Category 5A impairments on waterbody AUs that were split and retired for the 2008 cycle.
    - ● Table A2: Waterbody impairments moved from Category 5 to Category 4A.
    - ● Table A3: Waterbody impairments proposed to be moved from Categories 2 or 3 to Category 4A.
    - ● Table A4: Waterbody impairments removed from Category 5A of Indiana's 303(d) List of Impaired Waters as a result of routine assessments.
    - ● Table A5: Waterbody AUs and impairments previously listed in Category 5A that have been resegmented.
    - ● Table A6: Waterbody impairments moved from Category 5A to Category 2 or Category 3 based on new information.
    - ● Table A7: Waterbody impairments moved from Category 5A to Category 2 or Category 3 based on IDEM's change in assessment criteria for biological data.
    - ● Table A8: Waterbody impairments removed from Category 5B based on IDEM's statewide reassessment for fishable use support.
    - ● Table A9: Waterbody impairments added to Category 5A based on new assessments
    - ● Table A10: Waterbody impairments added to Category 5A based on new information
    - ● Table A11: Waterbody impairments added to Category 5A based on IDEM's new assessment methodology for recreational use of lakes (aesthetics).
    - ● Table A12: Waterbody impairments added to Category 5B based on IDEM's statewide reassessment for fishable use support.
    - ● Table A13: Indiana's 2008 303(d) List of Impaired Waters, Category 5A
    - ● Table A14: Indiana's 2008 303(d) List of Impaired Waters, Category 5B
  - — Attachment 2: IDEM's Consolidated Assessment and Listing Methodology
  - — Attachment 3: TMDL Schedule for 2008-2009
  - — Attachment 4: Update on the status of Category 4 waters
  - — Attachment 5: Indiana's response summary to public comments on the draft 2008 303(d) List of Impaired Waters.
  - — Attachment 6: Indiana's responses to USEPA comments, received during public comment period, on the draft 2008 303(d) List of Impaired Waters.
- ♦ Appendix B: Indiana's Consolidated List (Categories 1-5)
- ♦ Appendix C: Comprehensive Aquatic Life Use Assessments
- ♦ Appendix D: Metadata for the report
- ♦ Appendix E: IDEM's 305(b)/303(d) monitoring, assessment, reporting and listing schedule
- ♦ Appendix F: Indiana's data solicitation letter
- ♦ Appendix G: Trophic status and trends of Indiana's lakes

During the public comment period, IDEM received comments from ten (10) interested parties. The comments received and the State's responses are contained in a responsiveness summary which was included in the submittal package to U.S. EPA.[25] One of the interested parties (US

[25] See Attachment 5 (*Summary of Public Comments on the Draft 2008 303(d) List of Impaired Waters and IDEM's Responses*) and Attachment 6 (*U.S. EPA Comments on the 2008 303(d) Draft List and IDEM's Responses*) of the *Indiana Integrated Water Monitoring and Assessment Report 2008: Section 305(b) Water Quality Report and Consolidated List, Including Section 303(d) List of Impaired Waters (Category 5)* submittal.

Steel) raised questions regarding IDEM's response with respect to a cyanide listing comment.[26] According to the information provided by IDEM[27], the cyanide listing in question will remain listed. With the support of this additional information, the comments received were adequately addressed by IDEM.

In addition, after IDEM submitted its 303(d) list to U.S. EPA, U.S. EPA received a letter[28] from the National Wildlife Federation (NWF) asserting that IDEM failed to include on its 303(d) list the waters impaired by "exotic" species. NWF's letter contains general information about the impacts of various aquatic nuisance species (ANS) and also points out that IDEM currently tracks the presence of one algae species in the state's waters. In EPA's view, the discussion in this letter, while indicating the variety of concerns potentially raised by the presence of ANS, does not show that IDEM's decisions resulted in impaired waters being left off the state's 303(d) list.

U.S. EPA notes that states have taken different approaches regarding identification of waters that may be impaired by ANS. The different approaches taken by the states may reflect the fact that U.S. EPA has not determined whether aquatic nuisance species are pollutants within the definition of CWA 502(b) and has not provided guidance to the states on how to address waters that may be impaired by ANS. In addition, some states may not have appropriate methodologies for assessing ANS impairments. U.S. EPA intends to include clarification in the 2010 listing guidance on how monitoring and assessment methodologies should address the negative impacts of ANS on states' waters.

Priority Ranking and Targeting

U.S. EPA also reviewed the State's priority ranking of listed waters for TMDL development, and concludes that the State properly took into account the severity of pollution and the uses to be made of such waters, as well as other relevant factors such as areas where other interested parties are working on alleviating the water quality problem. Waterbodies were given a higher priority for TMDL development based on specific designated uses and the magnitude of the impairment. Waters that are in Category 5 for pollutants or parameters where there is no U.S. EPA guidance for development of a TMDL have been given a lower priority.

In addition, U.S. EPA reviewed the State's identification of WQLSs targeted for TMDL development in the next two years and concludes that the targeted waters are appropriate for TMDL development in this time frame. Table 10 and Table 11 under Section 6 of Appendix A1 of the decision document identify Indiana's targeting of waters for TMDL development over the next two years.[29]

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[26] See e-mails from Fredric Andes dated 5/5/08, and page 10 of Attachment 5 (*Summary of Public Comments on the Draft 2008 303(d) List of Impaired Waters and IDEM's Responses*) of the *Indiana Integrated Water Monitoring and Assessment Report 2008: Section 305(b) Water Quality Report and Consolidated List, Including Section 303(d) List of Impaired Waters (Category 5)* submittal.

[27] See e-mail from Andrew Pelloso, Chief - NPS/TMDL Section, Watershed Planning Branch, Office of Water Quality, IDEM dated 5/13/08.

[28] See e-mail from National Wildlife Federation dated 4/25/08.

[29] See Attachment 3 (*IDEM's TMDL Development Schedule for 2008-2009*) of the *Indiana Integrated Water Monitoring and Assessment Report 2008: Section 305(b) Water Quality Report and Consolidated List, Including Section 303(d) List of Impaired Waters (Category 5)* submittal.

Long term schedule

U.S. EPA has received Indiana's long-term schedule for TMDL development for all waters on the State's 2008 Integrated Report for Category 5 waters.[30] As a policy matter, U.S. EPA has requested that States provide such schedules.[31] U.S. EPA is not taking any action to approve or disapprove this schedule pursuant to Section 303(d) and is working with the State to expedite the development of TMDLs.

[30] See e-mail to Vilma Rivera-Carrero from Jody Arthur dated 4/14/08 with the attached IR Addendum (*IDEM's Long Term TMDL Development Schedule*).

[31] See Memorandum from Robert Perciasepe, Assistant Administrator for Water, to Regional Administrators and Regional Water Division Directors, "New Policies for Developing and Implementing TMDLs," August 8, 1997.